

meteorological activities of that country. This distribution is as follows:

Climatology: Observatorio meteorologico de Lisboa (Faculdade de Sciencias-Lisboa).

Actinometry: Observatorio meteorologico do Porto (Serra do Pilar-Porto).

Terrestrial Magnetism and Seismology: Observatorio meteorologico de Coimbra (Cumeada-Coimbra).

Synoptic charts and Forecasting: Serviço meteorologico da Marinha (Lisboa).

Agricultural Meteorology: Serviço meteorologico do Ministerio da Agricultura (Lisboa).

The studies of the high atmosphere and of atmospheric electricity are for the present under the Marine Service but will probably be changed in the reorganization. The Meteorological Service of the Azores will continue in charge of the meteorological work of the islands.

It is suggested that correspondence relating to any of the several fields of work mentioned be addressed directly to the office concerned.—C. L. M.

DUST STORMS OF NORTHERN IDAHO AND WESTERN MONTANA

There is a note on the origin of dust fall on page 32, volume 5, of the *Bulletin of the American Meteorological Society*, February, 1924. During my 12 years' residence in Montana and northern Idaho I have witnessed a great many dust storms. These storms, commonly known as "Palousers," have their origin in the desert region of eastern Washington and northeastern Oregon, and are of comparatively frequent occurrence. They are well known and despised by housekeepers in Kalispell, Missoula, Thompson Falls, Libby and all surrounding towns. The dust penetrates into every house and office, making it possible for anyone to write his name on the furniture. When accompanied by rain or snow, the window panes and buildings are besmirched with streaks of red dirt. To have one of these storms happen immediately after painting a house is exasperating. The dust travels over the undulating Palouse region in northern Idaho where the deposits have laid the foundations for one of the richest wheat-producing counties in America. Petersen (see *Science*, January 27, 1923) proved by repeated measurements that this deposit amounted to 2 inches per century. The dust is laid down in the mountains of northern Idaho where it may be seen any day and anywhere during the summer months. Here it no doubt has profoundly influenced the growth and distribution of one of America's most valuable timber trees, the western white pine, for the best growth and development of this species takes place on the deep soils which lie directly in the path of the westerly winds carrying and depositing this dust. One very pronounced dust

storm, which many will remember, occurred in March, 1917, when the desert region was dry and bare, but the forested area under cover of snow. At this time a sample of the dust as it had fallen on the snow in northern Idaho was taken, the snow melted, and the amount of dry soil weighed. This showed that the deposit in one single storm amounted to 600 pounds per acre. The dust was observed sticking to the limbs and leaves of trees generally in the Priest River Valley throughout the following summer.

Evidently these storms should be of more than passing interest in that they influence outdoor occupations, farm crops, and timber production.—J. A. Larsen.

SOUTH PACIFIC WEATHER REPORTS AND STORM WARNINGS

[Reprinted from Apia (Samoa), *Radio Bulletin, Samoa Times*, January 18, 1924]

South Pacific radio stations are cooperating with the Apia Observatory in collecting weather reports and broadcasting storm warnings. Suva, Nukualofa, Norfolk Island, Vila, Awanui, and Noumea sent their reports to Apia. Vila exchanges weather reports with Noumea. Norfolk Island passes its report to Suva. Noumea sends its report from Noumea and Vila to Suva. Suva transmits its own and the reports from Vila, Noumea, and Norfolk Island to Apia. Papeete and Nukualofa report direct to Apia.

The message consists of:

1. The station from which the report emanates
2. The barometer.
3. Thermometer—dry.
4. Thermometer—wet.
5. Wind—direction.
6. Wind force by Beaufort scale.
7. Sky and weather in Beaufort letters.

The station broadcasting weather reports makes each report successively. The break sign, dash-dot-dot-dot-dash (bk) separates each report, e. g.—

Apia—30.16–80.78. ENE. 3 BC (bk).

Suva—30.08–79–78 ENE. 5 OCR (bk) and so on, finishing with the time that observations were made, 0330 or 2030 M. M. T. civil (9 a. m. or 4 p. m. Apia time).

These reports are collected by Apia, turned over to Apia Observatory, and broadcasted with storm warnings and Apia's weather report at 2330 G. M. T. civil (noon Apia time) and at 0830 G. M. T. civil (9 p. m. Apia time). When storm warnings are issued Apia broadcasts on 2,000 meters and Suva repeats on 600 meters. If Apia issues a storm warning, Awanui broadcasts the warning immediately after the routine New Zealand weather report and informs the Meteorological Office, Wellington.